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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, THINH T

ART UNIT PAPER NUMBER

2818

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,454

Applicant(s)

RABADAM ET AL.

Examiner

Thinh T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED OFFICE ACTION

1. Claims 1-5,7-8 and 10-14 are pending in the Application.

Specification

2. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b/e) that form the basis for the rejections under this section made in this office action.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1,2,12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Baldwin (U.S. Patent 6,777,818) or Ahn et al. (US patent 6,424,034).

REGARDING CLAIM 1

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Baldwin (the abstract, fig 3, column 1 lines 60-62, column 3 lines 20-21, column 3 lines 33-34) discloses a non-volatile memory package comprising: a substrate (fig 3 reference 34) having a first surface and a second surface, an integrated circuit die (fig 3 reference 32) including a memory array mounted to the first surface of the substrate, and a passive component mounted to the second surface of the substrate (fig 3 reference 38) wherein the passive component is at least a portion of a voltage regulator circuit coupled to the integrated circuit die.

Similarly, Ahn et al. (the abstract, claim 1, column 1 line 14-15, column 4 lines 30-42, fig 2, fig 4) disclose the same invention.

REGARDING CLAIM 2

Baldwin (the abstract, fig 3, column 1 lines 60-62) discloses a non-volatile memory package wherein the passive component is electrically coupled to the integrated circuit die.

Similarly, Ahn et al. (claim 1, the abstract, fig 2 column 3 line 22-23) disclose the same invention.

REGARDING CLAIM 12

Baldwin (the abstract, fig 3, column 2 lines 28-31) discloses a non-volatile memory package wherein the passive component is mounted to the substrate with a conductive material.

Similarly, Ahn et al. (claim 1, claim 28, the abstract, fig 2, column 2 line 9-10) disclose the same invention.

REGARDING CLAIM 13

Baldwin (the abstract, fig 3, column 2 lines 29-30, column 4 line 23) discloses a non-volatile memory package wherein the passive component is a capacitor or an inductor

Similarly, Ahn et al. (the abstract, claim 1, fig 2 column 3 line 22-23) disclose the same invention.

5. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Baldwin (U.S. Patent 6,777,818).

REGARDING CLAIM 7

Baldwin (the abstract, fig 2, fig 3) discloses a non-volatile memory package wherein the substrate comprises a cavity and at least a portion of the passive component lies within the cavity.

6. Claim 10 is rejected under 102(e) as being anticipated by Ahn et al. (US patent 6,424,034).

REGARDING CLAIM 10

Ahn et al. (the abstract, fig 2 , claim 14,claim15) teach the use of epoxy.

Claim Rejections - 35 USC § 103

7. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by or as an alternative being obvious under 35 U.S.C. 103(a) over Ahn et al. (US patent 6,424,034).

Ahn et al. (the abstract, claim 1, fig 2 column 3 line 54) disclose a non-volatile memory package, wherein the integrated circuit die includes a flash memory array. Noted that even Ahn do not mention a flash memory array nothing in Ahn disclosure preclude that chip 120 do not have a flash memory array since Ahn disclosure of chip 120 can be a microprocessor and microprocessor in the present day can include a flash memory array on the microprocessor chip itself.

9. Claims 3,4,5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. patent 5,239,198) in view of Ahn et al. (U.S. patent 6,424,034).

REGARDING CLAIM 3,4

Lin et al. (fig 7) disclose all the invention except for the teachings that the passive device be a part of a voltage regulator. Ahn et al. (the abstract, fig 2, column 4 line 36-42), however; teach to use the passive component as a part of the voltage regulator.

It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the teachings by Barney et al. with the teachings by Ahn et al. in order to come up with the inventions of claims 3,4.

The rationale is as the following:

A person skilled in the art at the time the invention was made would have been motivated to increase the data speed transmission of the device or to enhance the performance of the memory device as suggested by Ahn et al. in the abstract and in column 2 lines 25-29.

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REGARDING CLAIM 5

Lin et al. (fig 7) disclose all the invention including a passive component that has the height less than the height of the solder ball except for the teachings that the passive device be a part of a voltage regulator. Ahn et al. (the abstract, fig 2, column 4 line 36-42), however, teach to use the passive component as a part of the voltage regulator.

It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the teachings By Barney et al. with the teachings by Ahn et al. in order to come up with the inventions of claims 5.

The rationale why claim 5 is obvious over Barney in view of Ahn has been provided in the rejection of claim 3,4.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being obvious over Ahn et al. (US patent 6,424,034) in view of further remark.

REGARDING CLAIM 11

Ahn et al. (the abstract, fig 2 , column 4 line 62) disclose all the invention except for specifying the thickness of the epoxy material between the passive component and the substrate; This feature, however, is considered obvious since it has been held that where the general conditions of a claim are disclosed in prior art, discovering the optimum workable involves only routine skills in the art. A person skilled in the art at the time the invention was made would have been able to select the right thickness of the epoxy material without any special teachings for a purpose of improving the semiconductor device.

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11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. patent 5,239,198) in view of Ahn et al. (U.S. patent 6,424,034) and in further view of Fukutomi et al (US patent 6,268,648)

REGARDING CLAIM 8

The combined teachings by Lin and Ahn et al. disclose all the invention of claim 8 except except for carving a cavity into the middle of the substrate for components, Fukutomi, however teaches how to make a substrate structure with cavity (fig 1, fig 3). It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the combined the teachings of Lin et al. and Ahn et al. with the teachings of Fukutomi et al. in order to come up with the invention of claim 8.

The reasoning is as follows:

A person of ordinary skill in the art would have been motivated to improve the combined teachings of Lin et al. and Ahn et al. with the teachings of Fukutomi et al. in order to achieve high reliability and decrease in size as suggested by Fukutomi et al. in the abstract.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-5,7-8,10-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,777,818.

Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 1-5,7-8,10-14 of the present invention is a similar version of the claimed invention in claims 1-13 of the above-identified U.S. Patents with similar intended scope.

It would have been obvious to one of ordinary skill in the art the time the invention was made to use the teachings from claim 1-13 of US patent 6,777,818 and his routine design skill in order to come up with claims 1-5,7-8, 10-14 of the present Application since a person skilled in the art would have been motivated to improve the device of US Patent 6,777,818 and expand its use for more profitability.

14. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and the page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

15. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to be abandoned (see M.P.E.P. 710.02(b)).

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CONCLUSION

16. The prior arts made of record and not relied upon are considered pertinent to applicant disclosure: Dalal et al. (US patent 6,618,267) disclose a Multi-level electronic package and method for making same,

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790.

The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Thinh T. Nguyen TTN

Art Unit 2818


David Nelms
Supervisory Patent Examiner
Technology Center 2800